

Title (en)
VARIABLE FLOW RATE PUMP

Title (de)
PUMPE MIT VARIABLER STRÖMUNGSRATE

Title (fr)
POMPE À DÉBIT VARIABLE

Publication
EP 2447497 A4 20160907 (EN)

Application
EP 09846511 A 20090625

Priority
JP 2009061598 W 20090625

Abstract (en)
[origin: US2012076637A1] A water pump (30) includes an impeller chamber (32) formed in a housing (31), a swirl chamber (40) formed in the housing (31) to communicate with a coolant passage (8) and the impeller chamber (32), and an impeller (33) that is supported to be free to rotate in the impeller chamber (32) and rotates in conjunction with an engine (2) so as to take in a coolant and discharge the coolant into the coolant passage (8) via the swirl chamber (40). The swirl chamber (40) is formed to be divided into a first swirl chamber (41) that communicates with the coolant passage (8) at all times, and a second swirl chamber (42) and a third swirl chamber (43) respectively connected to the coolant passage (8) via thermostats (S1, S2) respectively having switch valves that can be opened and closed. The thermostats (S1, S2) are operated to open and close, thereby connecting and cutting off the swirl chambers (42, 43) and the coolant passage (8), in accordance with a temperature of the coolant.

IPC 8 full level
F01P 5/10 (2006.01); **F01P 7/16** (2006.01); **F04D 15/00** (2006.01); **F04D 29/42** (2006.01)

CPC (source: EP US)
F01P 7/161 (2013.01 - EP US); **F04D 15/0022** (2013.01 - EP US); **F04D 15/0038** (2013.01 - US); **F04D 29/426** (2013.01 - EP US)

Citation (search report)

- [A] US 5228829 A 19930720 - NISKANEN TOIVO [FI], et al
- [A] JP H10103060 A 19980421 - SUZUKI MOTOR CO
- [A] DE 102006019737 A1 20071031 - BAYERISCHE MOTOREN WERKE AG [DE]
- [A] GB 1379075 A 19750102 - LANYON T B
- [A] EP 0953773 A1 19991103 - GATE SPA [IT]
- See references of WO 2010150379A1

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CN109026333A

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DOCDB simple family (application)
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